

COUNTRY ANALYSIS BRIEFS

Azerbaijan

Last Updated: November 2010

Background

Azerbaijan is emerging as one of Caspian region's most important strategic export openings to the West and increasingly becoming an important exporter of oil and natural gas.

While Azerbaijan's importance as a supplier of natural gas and oil likely will increase in the future, the continued disputes with Armenia over the Nagorno-Karabakh region, as well as issues with Azerbaijan's access to the Nakhchivan exclave continue to provide some political risk in the country. Furthermore, the conflicting claims over the maritime and seabed boundaries of the Caspian Sea between Azerbaijan and Iran also provide continued uncertainty, with Iran insisting on an even one-fifth allocation and challenging Azerbaijan's hydrocarbon exploration in disputed waters. Bilateral talks continue with Turkmenistan on dividing the seabed and contested oilfields in the middle of the Caspian, while discussions with Georgia continue on the alignment of their boundary at certain crossing areas.



Oil

Oil production in Azerbaijan recorded a significant increase over the last few years and surpassed the 1 million bbl/d mark in 2009.

Azerbaijan's proven crude oil reserves are estimated at 7 billion barrels in January 2010, according to the *Oil and Gas Journal*. The country's largest hydrocarbon basins are located offshore in the Caspian Sea, particularly the Azeri Chirag Guneshli (ACG) fields, which accounted for about 80 percent of Azerbaijan's total oil output in 2009.

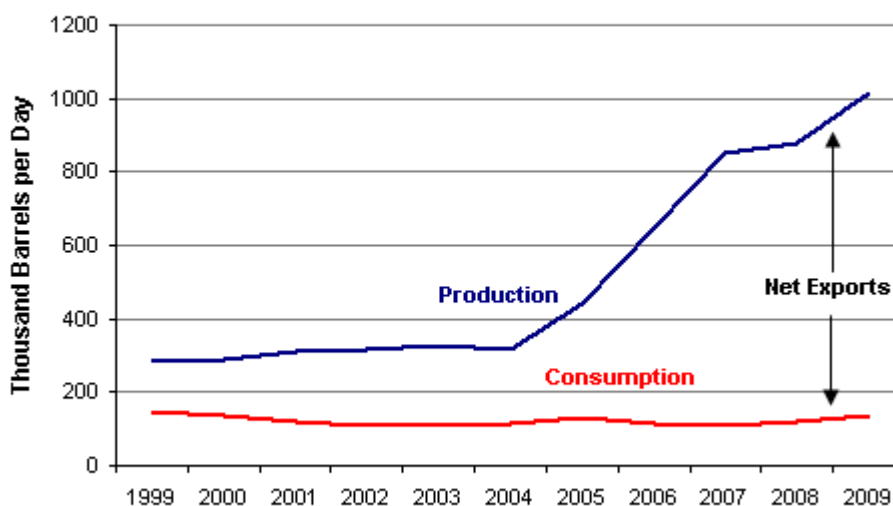
Sector Organization

The State Oil Company of Azerbaijan Republic (SOCAR) is Azerbaijan's state-owned oil and natural gas company and is responsible for producing oil and natural gas in Azerbaijan, operating the country's two refineries, running the country's pipeline system, and managing the country's oil and natural gas imports and exports. Although the Ministry of Industry and Energy handles exports as well as exploration and production agreements with foreign companies, SOCAR is party to all of the international consortia developing oil and gas projects in Azerbaijan. On its own, SOCAR produces less than 20 percent of Azerbaijan's total output, with the rest (about 80 percent) being produced by the Azerbaijan International Operating Company.

The Azerbaijan International Operating Company (AIOC) is a consortium of 10 petroleum companies that have signed extraction contracts with Azerbaijan. The AIOC is led by British Petroleum (BP), but also includes Chevron, Statoil, Türkiye Petrolleri, ExxonMobil, and SOCAR.

AIOC has made significant direct investments in the development of the ACG fields, as well as the construction of the Baku-Tbilisi-Ceyhan (BTC) pipeline. BP is the largest foreign investor and has been involved in Azerbaijan since 1992.

Azerbaijan's Oil Production and Consumption, 1999-2009



Source: U.S. Energy Information Administration

Exploration and Production

Oil production in Azerbaijan increased from 283,000 barrels per day (bbl/d) in 1999 to more than 1 million bbl/d in 2009, increasing more than 15 percent compared with the prior year. Azerbaijan's production is expected to continue rising in 2010. The output likely was dampened in 2009 as a result of the prolonged partial shut-in at the offshore ACG project early in the year, which was necessitated by a gas leak.

The ACG fields are Azerbaijan's largest, located 62 miles east of Baku in the Caspian Sea. Total peak production was expected to reach 1.1 million bbl/d in 2010. The ACG fields have an estimated 9 billion barrels of reserves and are operated by BP on behalf of AIOC.

There were a number of projects in Azerbaijan's offshore that seemed promising, but were deemed disappointing after they turned out to either be dry holes or the oil discovered was deemed non-commercial, resulting in closure of several projects. In addition to the lack of new producing fields, political complications related to boundary disputes further dampened exploration. However, offshore exploration could receive renewed interest and additional foreign investment if the littoral States reach an agreement on legal status and borders in the Caspian Sea.

Azerbaijan also has some onshore oil production, although it is modest compared to the offshore. There were nine onshore production sharing agreements in 2009 at various fields, accounting for only a fraction of total oil production.

Oil Exports

Azerbaijan exported an estimated 876,000 bbl/d in 2009, according to EIA, increasing more than 16 percent compared with 2008 and nearly tripling since 2005. Most of Azerbaijan's oil is exported via pipeline, but small amounts are shipped by truck and railway.

Pipelines

Azerbaijan has 3 major export pipelines:

The majority of oil exports pass through the Baku-Tbilisi-Ceyhan (BTC) pipeline system, which runs 1,110 miles from the ACG fields in the Caspian Sea, via Georgia, to the Mediterranean port of Ceyhan, Turkey. From there the oil is shipped by tanker mainly to European markets. The BP-operated pipeline began exporting in July 2006 and has the capacity of 1.2 million bbl/d. The BTC pipeline is also used to export Kazakh oil, which travels by tanker across the Caspian to the

Sangachal Terminal, near Baku.

The Baku-Novorossiysk pipeline is 830 miles long and has a capacity of 100,00 bbl/d. The pipeline runs from the Sangachal Terminal to Novorossiysk, Russia on the Black Sea. SOCAR operates the Azeri section and Transneft operates the Russian section, which has at times complicated the operation of the pipeline as there is an ongoing dispute between SOCAR and Transneft concerning transportation tariffs on the pipeline. There are proposals to increase the capacity on the pipeline to between 180,000 and 300,000 bbl/d, a key transportation addition as production grows in the ACG oil fields and throughput from Kazakhstan increases in the future.

The Baku-Supsa pipeline has an estimated capacity of 145,000 bbl/d and runs 520 miles from Baku to Supsa, Georgia on the Black Sea. It is operated by BP and owned by AIOC members. The pipeline is used by ExxonMobil Company to export its share of oil from the ACG fields because ExxonMobil, although it is a participant in AIOC, is not a participant in the BTC pipeline.

Transshipment of Kazakh oil via Azerbaijan

In November 2010, Azerbaijan and Kazakhstan reached a preliminary agreement on maritime transport, which covers transport of Kazakh oil via the Caspian Sea and Azerbaijan through the BTC pipeline. With the continuing growth in Kazakh oil production and the expected boost in total Kazakh oil output with the commencement of the giant offshore Kashagan field (expected in 2012), the transportation issue between Azerbaijan and Kazakhstan will continue to gain importance.

Downstream/Refining

Azerbaijan has a crude oil refining capacity of 399,000 bbl/d as of January 2010, according to the *Oil and Gas Journal*. Azeri crude oil is refined domestically at two refineries: the Baku refinery, with a capacity of 239,000 bbl/d, and the New Baku refinery, with a capacity of 160,000 bbl/d.

Domestic consumption of oil approximated 100,000 bbl/d in 2009, falling by about 5,000 bbl/d compared with the year prior.

Natural Gas

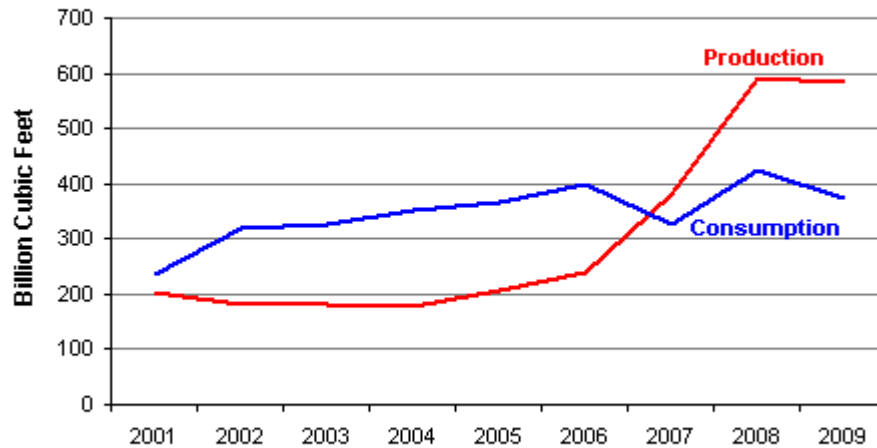
With the startup of the Shah Deniz natural gas and condensate field in 2007, Azerbaijan became a natural gas net exporter. Natural gas exports to Europe totaled 209 Bcf in 2009.

According to the *Oil and Gas Journal*, Azerbaijan has proven natural gas reserves of roughly 30 trillion cubic feet (Tcf) as of January 2010.

Exploration and Production

In 2009, Azerbaijan produced 583 billion cubic feet of natural gas and consumed 374 billion cubic feet. Almost all of Azerbaijan's natural gas is produced from offshore fields. The country's leading natural gas field is the Shah Deniz natural gas and condensate field, which started producing in 2006. The Guneshli field, part of the ACG oil and gas fields system, provides associated gas to the Azerigaz system for domestic use via an undersea gas pipeline to Sangachal Terminal at Baku. The Sangachal Terminal, located south of Baku, is one of the world's largest integrated oil and gas processing terminals. It receives, stores, and processes both crude oil and natural gas from the ACG fields and from Shah Deniz, then ships these hydrocarbons through the BTU and SCP pipelines for export.

**Azerbaijan's Natural Gas Production and Consumption,
2001-2009**



Source: U.S. Energy Information Administration

Azerbaijan's natural gas production increases in the future are expected to come from the continuing development of the Shah Deniz field, which is the largest natural gas discovery since 1978. According to BP (the project's technical operator) Shah Deniz contains potential estimated reserves of roughly 35 Tcf of natural gas. Shah Deniz is located offshore in the Caspian Sea, approximately 60 miles southeast of Baku.

Phase 1 of the Shah Deniz field's development was completed in 2006 and includes a fixed offshore platform, 2 subsea pipelines to bring the hydrocarbons ashore, and a new onshore gas-processing terminal adjacent to the existing oil terminal at Sangachal, near Baku. The Shah Deniz consortium members (most of whom are also members of AIOC) began producing natural gas for export during spring 2007. The field produced 110 Bcf in 2008 and increased output to approximately 250 Bcf in 2009.

Phase 1 output is expected to peak at 304 billion cubic feet as well as 45,000 bbl/d of condensate in 2010. According to IHS Global Insight, the field is expected to eventually yield around 882 Bcf for export.

Phase 2 of the Shah Deniz development is expected to have peak capacity of 700 Bcf but its completion was delayed to 2016 as a result of lack of a transit agreement between Turkey and Azerbaijan. Negotiations on Phase 2 have been going on for years, but stagnated recently. In November 2010, however, a new round of negotiations between the Shah Deniz consortium and potential buyers resumed. A number of West European utilities are seeking to secure supplies for the Nabucco pipeline, which, if completed, will transport Caspian natural gas to Europe via Turkey. Key supply source for the Nabucco pipeline is Azerbaijan's Phase 2 of the Shah Deniz project. In addition, the Italy-Turkey-Greece Pipeline (ITGI) as well as the Trans-Adriatic Pipeline (TAP) are expected to carry Shah Deniz gas to Europe.

Sector Organization

Azerigaz, a SOCAR subsidiary, is responsible for natural gas processing, transport, distribution, and storage, mainly in the domestic market. Azneft, another SOCAR subsidiary, is responsible for exploration, development and production from the older onshore and offshore natural gas fields owned directly by SOCAR. AIOC is the largest foreign joint venture in association with SOCAR, and is involved in the development of the ACG oil and gas fields and the Shah Deniz gas field. Statoil and BP are the operators of the Shah Deniz gas field, and are the largest shareholders in the Shah Deniz consortium, each holding 25.5 percent. Other shareholders include Total, LUKoil, SOCAR, OIEC of Iran, each at 10 percent, while TPAO holds 9 percent.

Natural Gas Exports

Azerbaijan became a net exporter of natural gas in 2007 with the startup of the Shah Deniz natural gas field; in prior years it had been importing natural gas from Russia. In 2009, Azerbaijan exported an estimated 209 Bcf, mainly shipping it via the South Caucasus Pipeline (SCP). However, volumes of natural gas are also exported to Russia via the Gazi-Magomed-Mozdok

pipeline and a small volume of natural gas is shipped to Iran via the Baku-Astara pipeline. Azerbaijan delivers a small volume of natural gas to Iran. In exchange, Iran supplies Nakhchivan, Azerbaijan's exclave situated between Iran and Turkey.

South Caucasus Pipeline (SCP)

The main conduit for Azerbaijan's natural gas exports is the 555-mile SCP, also known as the Baku-Tbilisi-Erzurum pipeline (BTE), which runs parallel to the BTC oil pipeline for 429 miles, most of its route, before landing in Erzurum, Turkey. The pipeline began exporting in 2007, and has the capacity to transport about 770 Bcf of natural gas, according to IHS Global Insight. The Shah Deniz consortium owns and operates the pipeline.

Gazi-Magomed-Mozdok Pipeline

This 150-mile pipeline transports natural gas from Azerbaijan to Russia under an agreement signed by SOCAR and Gazprom in 2009. Prior to 2007, this pipeline used to transport natural gas from Russia to Azerbaijan, but the agreement allowed for the pipeline flow to be reversed, making Azerbaijan an exporter of natural gas to Russia. Gas exports to Russia began in 2010 at approximately 35 Bcf per year.

Baku-Astara Pipeline

Due to tensions between Azerbaijan and Armenia, Azerbaijan in late 2006 began a swap deal with Iran that provides natural gas to Azerbaijan's geographically separate Nakhchivan exclave. Azerbaijan ships natural gas into Iran via the Baku-Astara Pipeline and Iran then delivers the gas via a new 30-mile pipeline into the exclave. Iran receives a 15 percent commission on transit fees. In early 2010, Iran and Azerbaijan signed an additional gas supply deal for increased volumes of gas from Azerbaijan to be delivered to Iran for its own consumption, and volumes are likely to increase with the renovation of the pipeline and upgrades to the Astara gas compressor.

In late November 2010, Azerbaijan and Iran signed a memorandum of cooperation on natural gas supplies and electricity swaps, which likely will expand energy trade between the two countries.

Profile

Energy Overview

Proven Oil Reserves (January 1, 2010)	7 billion barrels
Oil Production (2009)	1.01 million barrels per day
Oil Consumption (2009)	100 thousand barrels per day
Crude Oil Distillation Capacity (2009)	399 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2010)	30 trillion cubic feet
Natural Gas Production (2009)	583 billion cubic feet
Natural Gas Consumption (2009)	374 billion cubic feet
Recoverable Coal Reserves (2007E)	None
Coal Production (2009)	None
Coal Consumption (2009)	None
Electricity Installed Capacity (2008)	5.7 gigawatts
Electricity Production (2008)	22.6 billion kilowatt hours
Electricity Consumption (2008)	18.8 billion kilowatt hours
Total Energy Consumption (2008)	0.7 quadrillion Btus*, of which Natural Gas (64%), Oil (32%), Hydroelectricity (4%),
Total Per Capita Energy Consumption (2008)	83.0 million Btus
Energy Intensity (2008)	9,514 Btu per \$2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2008)	38.4 million metric tons, of which Oil (46%), Natural Gas (54%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2008)	4.7 metric tons
Carbon Dioxide Intensity (2008)	5.4 Metric tons per thousand \$2000-PPP**

Oil and Gas Industry

Major Oil/Gas Ports	Baku, Sangachal (BTC)
Foreign Company Involvement	Agip, Chevron, ExxonMobil, Lukoil, Statoil, TotalFinaElf
Major Oil Fields (production, bbl/d)	ACG (400,000 bbl/d)
Major Natural Gas Fields (production, Bcf/d)	Shah Deniz (2006): 350 bcf per year by 2009
Major Pipelines (capacity, bbl/d)	BTC Pipeline (1 million), Western Early Oil (155,000), Northern Early Oil (95,000)
Major Refineries (capacity, bbl/d)	Baku (238,978), New Baku (160,000)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power.

**GDP figures from Global Insight estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links

[EIA: Country Information on Azerbaijan](#)

U.S. Government

[CIA World Factbook](#)

[U.S. Department of State: Background Notes](#)

[Azerbaijan International](#)

[European Bank for Reconstruction and Development](#)

[World Bank](#)

Associations and Institutions

[Azerbaijan Business Center](#)

[British Petroleum](#)

[Nabucco Pipeline Project](#)

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